HSU Marine Laboratory

HSU Marine Lab “Fact Sheet”

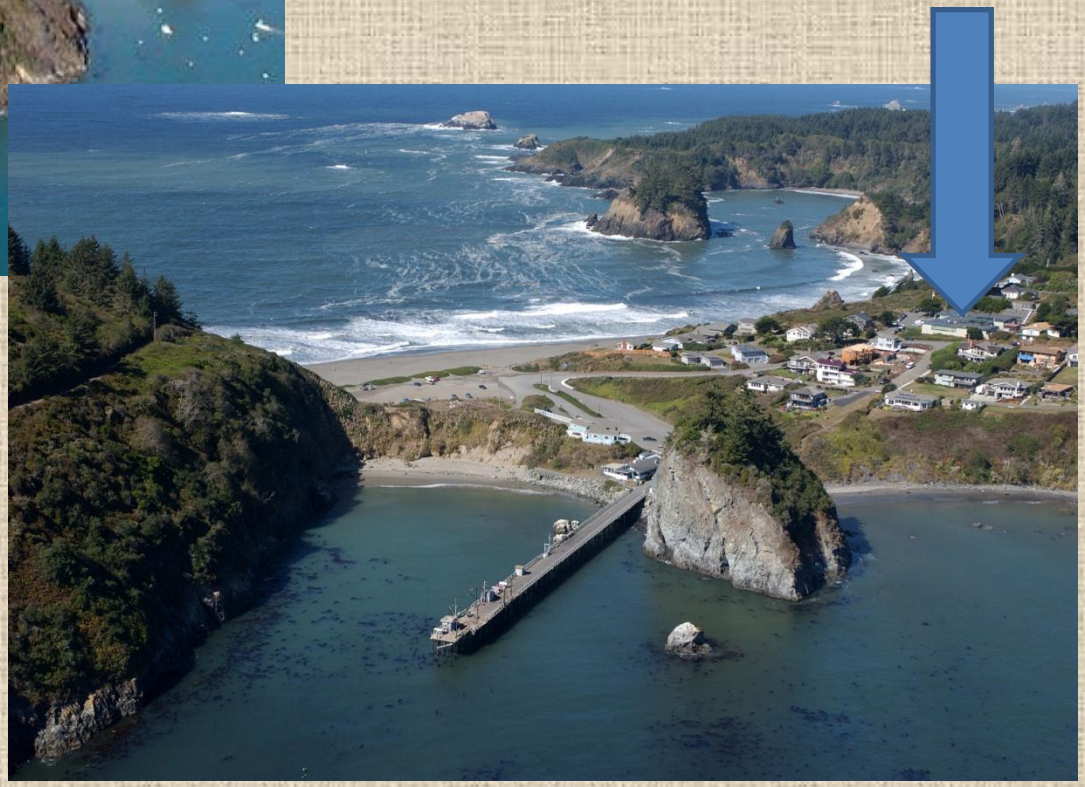
- Located in Trinidad, CA, on bluff above Trinidad Bay ASBS;
- Built in 1964 (7,400 sq ft); expanded in 1975 (to 16,200 sq ft);
- Purposes:
  - Undergraduate Instruction and research;
  - Faculty and graduate student (MS) research;
  - Collaborative Research (NOAA);
  - Public Outreach

HSU Marine Lab Facilities

- Two large 28-station instructional classrooms/laboratories;
- Offices for 14 faculty and graduate students;
- Specialized research labs;
- Algae & zooplankton rearing room; small aquarium room;
- Recirculating seawater system with 2,400 sq ft wet lab and large display aquaria (*minimal pumping costs and seawater use/discharge*)

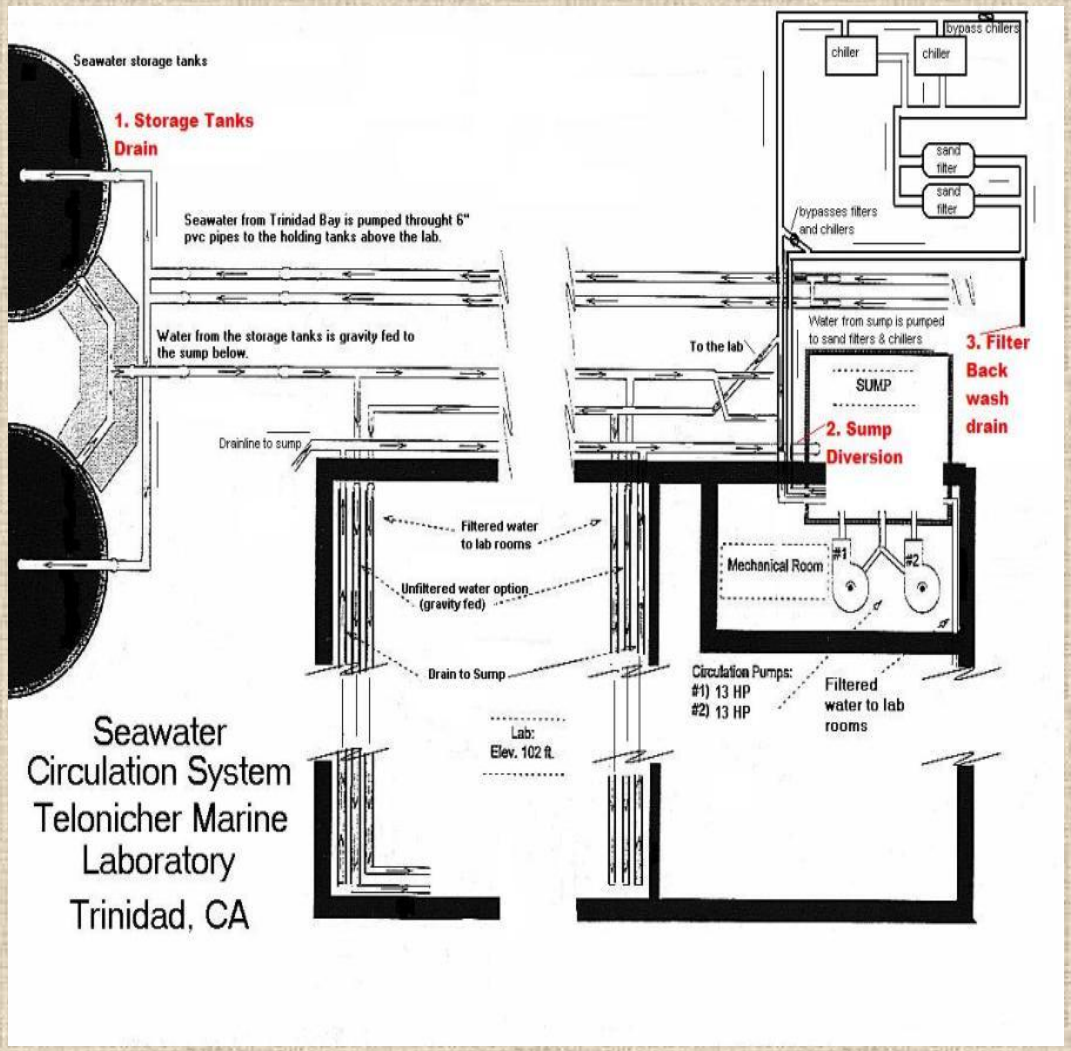
Water is pumped from the pier on Trinidad Bay

HSU Marine Lab



into two redwood storage tanks (120,000 gallons combined) at the HSU Marine Lab

From the storage tanks, seawater is gravity fed to a sump, then to filters and chillers, then through tanks and wet tables, then back to sump, to filters, chillers, etc., in a repeating cycle.



Chillers and sand filters ensure cool filtered water is supplied to the wet lab and display aquaria

Temperature is maintained at about 11-12 degrees C.
No chemicals are used to treat our water.

The wet lab has just been fully renovated, mostly using NSF FSML grant funding.

The wet lab supports faculty and student research and our public display aquaria (replaced during our wet lab renovation via a large private donation)

Public Outreach

- About 15,000-20,000 visitors/yr;
- Large hallway display aquaria;
- Outdoor “Touch Tank”
- Marine Naturalist program supported entirely by donations, marine lab merchandise sales.

Discharge Into Trinidad Bay – single pipe

- Seawater discharge is limited to periodic back-flushing of filters; occasional draining of small tanks (100-500 gallons); and draining and refilling of redwood storage tanks.
- Calculated Upper bounds on annual seawater discharge = 244,500 – 335,000 gallons.
- As initially constructed, many lab freshwater floor drains (13), sinks (16), and the stormwater drains from roof (6), road, and parking lots were connected with the seawater discharge in a single comingled pipe.

The Marine Lab's Discharge Location at Trinidad Bay ASBS

2008 Marine Lab Infrastructure Project: $350,000 project to eliminate avoidable laboratory freshwater discharge to Trinidad ASBS (per SWRCB requests)

- Physical Modifications:
  - All freshwater drains were diverted to lab's septic system;
  - New leach field was constructed – leach pits as backup;
  - Rear parking lot drains were routed to new oil/water separator installed in rear parking lot;
  - Drainage inlet filter inserts were installed at three locations at the front of the building to trap contaminants entering those storm drains.
  - Only roof drains, rear parking lot runoff (small surface area), and front stormwater drains now remain routed to the marine lab's Trinidad Bay outfall.
- Behavioral Modifications:
  - Elimination of boat washing in rear parking lot;
  - Records now routinely kept of discharges associated with filter back-washing, refilling of storage tanks, etc.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Future Improvements

- Three stormwater drains on the west side of the HSU Marine Lab, on City of Trinidad property, are currently routed to the Marine Lab's single discharge pipe. We are working with the City to instead connect these drains to the City's stormwater system, per their new stormwater project.
- We have identified easily accessible locations to collect/monitor our seawater discharge (on marine lab property) and our stormwater discharge (manhole cover access).